

REMARKS

Claims 50-79 are pending in the application. Claims 50-63 and 68-74 were rejected under 35 U.S.C. § 103(a) as described on pages 3-5 of the Office Action. Claims 63-67 were rejected under 35 U.S.C. § 103(a) as described on page 5 of the Office Action. Claims 75 and 76 were rejected under 35 U.S.C. § 103(a) as described on pages 5-6 of the Office Action. Claim 77 was rejected under 35 U.S.C. § 103(a) as described on pages 6-7 of the Office Action. Claim 79 was rejected under 35 U.S.C. § 103(a) as described on page 7 of the Office Action. Claims 50, 72, 75 and 79 are the only independent claims.

Each of independent claims 50, 72, 75 and 79 have been amended to require the side surface of the micro-protrusion on micro-cavities to extend at an inclusive angle from larger than 90° to approximately 110° to an intended direction of sliding of the sliding member relative to the other member and to the surface of the substrate. Support for the amendment can be found in the specification, for example on page 10, line 3 through page 11, line 21.

As discussed in substantial detail in the present specification, the present invention is directed to a method, during the manufacture of a slider member to be used in sliding relation to another member, of forming micro-protrusions on or micro-cavities in a surface of a substrate from which is formed the slider member. This is done specifically in a manner to, during subsequent use of the slider member in sliding relation to the above member, reduce sticking between the surface and the another member and to reduce entrapment of formed particles therebetween. Attention is particularly directed to the discussion of the prior art beginning at the middle of page 2 and continuing through the paragraphs spanning pages 6 and 7 of the present specification. Thus, prior art arrangements suffered from certain inherent disadvantages. Such disadvantages are overcome in accordance with the present invention, particularly in accordance with the aspect represented in independent claims 50, 72, 75 and 79. In particular, fast atomic beams are irradiated through a mask member onto the surface a substrate such that each formed micro-protrusion or micro-cavity has a top or bottom surface, respectively, and a side surface extending at an inclusive angle from **“larger than 90° to approximately 110°** to an intended direction of sliding of the slider member relative to the other member and to the surface of the substrate.”

It is respectfully submitted that the prior art of record fails to teach the above identified limitation.

Page 3 of the Office Action asserts that Hatakeyama '781 teaches that a fast atomic beam "may impinge at an angle normal to the surface." While not addressing the accuracy of the asserted teachings of Hatakeyama '781, is respectfully that the reference fails to teach or suggest that each micro-protrusion or micro-cavity has a side surface extending at an inclusive angle of from larger than 90° to approximately 110° to an intended directional sliding of the slider member relative to the other member.

It is respectfully submitted that Nakayama, Hatakeyama '426, Platter and Sakai fail to teach the short comings of Hatakeyama '781 such that a combination of the teachings of Nakayama, Hatakeyama '426, Platter and Sakai would teach that which is required in independent claims 50, 72, 75 and 79.

As discussed on page 4 of the Office Action. Nakayama is relied upon for allegedly teaching contouring the surface of a protective layer overlying a magnetic member, contouring the surface of a substrate upon which a magnetic film layer and a protective layer are subsequently formed, the surface contour features having a depth/height between 20 and 50 nm and contouring a surface with 3000-6000 mesh lapping paper. Furthermore, as discussed on page 5 of the Office Action, Hatakeyama '426 is relied upon for allegedly teaching using a micro-particle shielding mask. As discussed on page 6 of the Office Action, Platter is relied upon for allegedly teaching a magnetic head with a curve surface. Finally, as discussed on page 7 of the Office Action, Sakai is relied upon for allegedly teaching contouring a slider such that it has a multilevel surface.

While not addressing the accuracy of the asserted teachings of Nakayama, Hatakeyama '426, Platter and Sakai discussed above, it is respectfully submitted that each of Nakayama, Hatakeyama '426, Platter and Sakai, fails to teach or suggest micro-protrusions or micro-cavities having side surfaces extending an inclusive angle from larger than 90° to approximately 110° to an intended directional sliding of a slider member relative to the other member and to the surface of the substrate, as required in each of independent claims 50, 72, 75 and 79.

Because neither Hatakeyama '781, Nakayama, Hatakeyama '426, Platter nor Sakai teach or suggest micro-protrusions or micro-cavities having side surfaces extending an inclusive angle from larger than 90° to approximately 110° to an intended directional sliding of a slider member relative to the other member and to the surface of the substrate, as required in each of independent claims 50, 72, 75 and 79, it is respectfully submitted that a combination of Hatakeyama '781, Nakayama, Hatakeyama '426, Platter and Sakai additional fails to teach that which is required in independent claims 50, 72, 75 and 79 within the meaning of 35 U.S.C. § 103.


Furthermore, as claims 51-71, 73, 74, 76 and 77 are dependent upon claims 50, 72 and 75, respectively, and therefore include all the limitations thereof, it is additionally respectfully submitted that claims 51-71, 73, 74, 76 and 77 are additionally patentable over the prior art of record within the meaning of 35 U.S.C. § 103.

Having fully and completely responded to the Office Action, Applicants submit that all of the claims are now in condition for allowance, an indication of which is respectfully solicited.

If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

Respectfully submitted,

Yotaro HATAMURA et al.

By: 

Thomas D. Robbins
Registration No. 43,369
Attorney for Applicants

TDR/jmj/jlg
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
June 23, 2004